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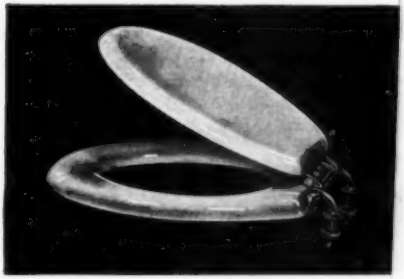

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Give More Drying Time

to Get a Better Finishing Job on Fine Hardwoods

by F. W. Purdon
Finishing Superintendent

HAVING had the pleasure to supervise the finishing of some 400 fine pieces of furniture for the new Triangle Building, located in Washington, D. C., in the early months of this year, I have been astonished at the number of requests which have continued to come to our offices as to how this finish was produced; also the inquiries as to what materials were used to produce this finish.

What those inquiring seemed to be chiefly interested in was the fullness, clarity and softness of the finish. When I read some of these letters of inquiry, really, I was amazed. One would think we had developed something new, or had a lot of tricks up our sleeves. The fact of the matter is, we produced this finish on these goods by stepping back, using some past methods of finishing and forgetting this crazy mania of speed, speed, speed.

Again, as I look about and see the finish on some really fine designed furniture which has been finished by the ultra-modern speed method, I am not surprised. What I mean by the ultra-modern speed process is the 4-hour fillers, the 4-hour varnish and the lacquer which may be applied three coats a day, and rubbed (?) the following day, or possibly flatted and shipped the same day.

Yes, it is possible to purchase these materials, and no doubt they have worked out quite satisfactorily in the laboratory where

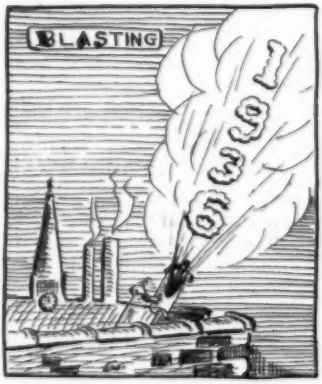
Editor's Note: In publishing this article, Industrial Finishing is not going on record as an enemy to speed in production, nor are we criticizing any reputable firm or individual who makes or sells a good material designed to cut some time from certain finish schedules. Rather, we are permitting an experienced finishing superintendent an opportunity to have his say along this line as he explains the secret of a very beautiful and durable wood finishing job which has commanded much admiration and comment.

■ ■ ■

they have been tested on small panels, say 6x12-in., under ideal conditions. The technician instructs the salesman, who goes forth to sell to Fred, Jim and Bill, that he can put on three coats in the time which is now required for one to dry; that he can fill in the morning and coat in the afternoon, and in lots of cases, "Why sure, you can stain, fill and coat all in one day."

These all look good to Fred, Bill or Jim, who may perhaps be in a tight spot due to the fact that there has been a general improvement in orders, which in all cases must be shipped immediately if not sooner. So Fred, Bill and Jim adopt the modern methods. Then comes another gentle rise in orders, and not satisfied with the time the modern materials and methods have saved, in the finishing process, the heads higher up begin to press Fred, Bill and Jim for a faster schedule.

Well, next comes the forced dry (?) methods. Force the stain, filler and coats with heat. Again we save some time, but right here is where there is one big mistake made when finishing wood. These methods on metal may be and possibly are all right, but there is one thing which they have overlooked. Wood is absorbent and is constantly working when exposed to different changes in humidity. So the work is force-dried on stain, filler and all coats, finished up, trimmed, packed and shipped. So what? Well, here is one case that I saw recently in a large retail furniture house.



I happen to be quite well acquainted with the manager. When I dropped into his place to make final arrangements for our annual trip into the big woods after deer, and having made the final arrangements for our coming trip, I asked how business was. This was his answer:

"Not so hot; see that walnut suite there? Well I have had two prospects this week and lost both of the sales on that number on account of the finish."

It was a beautiful suite, fine pleasing design, with well selected and matched veneers, with beautiful inlay. Just one of those numbers that draws you to it as soon as you see it. But what a setback you get when you examine it closely. It certainly was a fine example of the modern method of speed finish.

The finish showed shrinkage in the filler and lacquer coats. The rubbing had been done before the solvents were thoroughly out of the film. This caused the pieces to have a grayish cast. The rubbing evidently had been done with a machine and had not been worked out in the corners and along the edges of moldings and rails. In general, it was certainly a very poor finish; no fullness or

softness to bring out the beauty of the wood. It just seemed to have the appearance of shrinking away.

I firmly believe the trouble was caused by not allowing sufficient time for drying between operations, or the mania for speed, speed, speed. The sorrowful part of this is that when work goes wrong due to the mania for speed, and is shipped back as this suite is going to be, who takes the responsibility? I'll tell you. It's Fred, Jim or Bill.

Why not halt this ever-increasing mania for speed, and avoid trouble with the finished product?

The job mentioned at the beginning of this article, which was made for executive offices in the Triangle Building, Washington, D. C., was finished with a 4-hour varnish—but I gave each of the first two coats 24 hours to dry instead of four. I gave the last coat 48 hours to dry before rubbing instead of 12, or over night. After the work was rubbed, I gave it 24 hours before the final clean-up and inspection, as this type of varnish shows some grayness on the surface after rubbing. If allowed to dry 24 hours after rubbing (which was oil rubbing with FFF pumice) this gray cast may be easily cleaned up with a good cleaner, leaving a soft semi-lustrous finish.

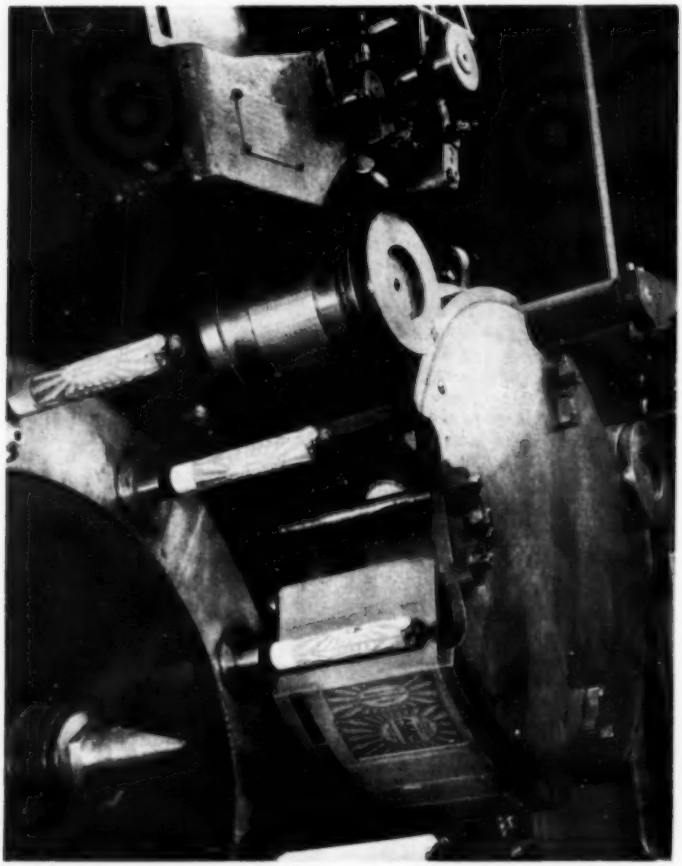
The point I have tried to convey to the finisher is that if the new 4-hour varnishes and fillers and the lacquer finishes were given the proper time to dry, they would produce a much better finish from the point of durability, and they would cut down the risk of having finish go wrong after it has been shipped. The speed mania, if persistently followed in finishing, will ultimately lead to trouble; and there is really no necessity for trying to produce a fine finish on real quality goods in a 3-day or 4-day schedule, and invite trouble with the finish when a matter of three or four more days time in the operations will give you the better finish, boost the appearance of the goods, and you know there is not going to be a complaint follow, but a satisfied and pleased customer.

Milk Truck Design and Finish

Sheffield Farms has copied the familiar milk bottle in designing new special delivery trucks to handle its orders in the midtown business section of New York City. Even the hubcaps are decorated with milk bottles, and the radiator looks like a bottle hood. The truck is loaded from a door

Identifies the product at a glance.

in the rear and carries 18 cases or 216 bottles. The body of the truck is made of steel and wood with aluminum over this, and the finish is lacquered in cream and white. The cream line shows as well as the streamline.—B. CALDWELL.



Clean, uniformly-conditioned air is necessary to the success of this close-register 2-color coating operation on tooth-paste tubes. Two horizontal cylinders each carry an engraving which receives color from a train of "inking" rolls. The engraving on one cylinder is inked in red; the engraving on the other is inked in black. These inked engravings transfer their colored designs to stretched rubber mats positioned "just so" on the large cylinder. The inked pads, in turn, transfer their 2-color design onto the solid-color tooth-paste tubes, making a three-color job ready for force-drying or baking. After this occurs the tubes are transferred to another machine where they are coated with an air-drying clear lacquer. Photo by William M. Rittase. Loaned through courtesy of Sherwin-Williams Co.

Air-Conditioning . . . for a Uniformly Better Product

by J. O. Hasson
Director, Industrial Paint Division
The Sherwin-Williams Co.

AIR-CONDITIONING is still thought of largely in terms of something to afford added comfort. In this capacity there is an inclination to regard it as a luxury—an unessential investment. In practice, it has proved its value from the comfort standpoint alone. But it has another function worth considering. The tremendous advantage and practicability of air-conditioning in the controlled drying of inks, lacquers, and other finishes has been quite overlooked. It is also the means to eliminating almost entirely, the damaging effects of dust specks and the effects of excess moisture or undue dryness.

Consider the waste, and the poor quality finish resulting from dust particles settling on a finish. Recall the printer and the package man who are held up sometimes for days because the atmosphere causes sticking of spirit label varnishes; or the printing of finishes on toys, furniture and other items when wrapped, because of the poor control of drying.

An Air-Conditioning Installation

Several years ago the Sun Tube Corporation of Hillside, N. J., (extruded containers and collapsible tubes) made what would seem to many an unwarranted investment as a part of their complete modernization program.

A complete air-conditioning system was installed, drawing air from outside and thoroughly cleansing it with fresh water pumped from a well 250-ft. deep. In winter, clean air of proper humidity is supplied at the rate of 40,000-cu.ft. per minute, and a room temperature of 70°F. is maintained. In summer, the air is cooled from 10 to 15 degrees below the outdoor temperature.

As a part of this controlled-atmosphere program, baking ovens were placed on a floor above and surrounded by insulating chambers. An endless conveyor chain carries all tubes and containers through an opening in the ceiling into the baking ovens. The result is absolute comfort, an absence of any painty odor, and products that are clean, and free from dust or lint.

There is still another aspect to modernizing and air conditioning a plant: A higher type of employes can be commanded, and the productive efficiency of all workers is increased. To further insure a clean, clear and flawless

product, machines are cleaned regularly—and it is interesting to note how the time required for the house-cleaning operation has been reduced since the installation of the air-conditioning system in the Sun Tube Corporation's plant. This establishment operates nights as well as during day time a large percent of the time, which makes imperative the avoidance of long delays waiting for the air to clear after the regular and essential house-cleaning program. Abundant daylight and improved artificial light are both supplemented by the diffusing and spreading values of light-painted walls and ceilings. Floors are light gray; machines are green.

Air-Conditioning Advantages

The dust-free air, made possible by air conditioning, eliminates the spotting of freshly applied enamels, while uniform temperature and humidity permit a close control of drying. This control of drying is particularly important in the case of the coatings of clear, protective lacquers which are air-dried. Failure to dry within the set time would upset the entire chain of operations which are timed to the second. This timed production and conveyor system has proved to be a tremendous saving and would be impossible without conditioned air.

Perhaps where clean atmosphere counts for the most is in the delicate offset printing operation. Intricate patterns involving as many as four colors would be ruined by lint or dust distorting the printing.

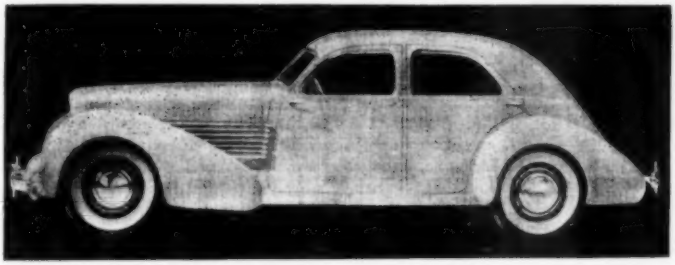
From the standpoint of a fine finished product, a timed straight-in-line production schedule, and efficient operation from better than average employes, air-conditioning a plant is not only desirable but a real operating economy. It has proved so at the Sun Tube plant and others. It is possible to handle more business, and where competition is keen it will be found customers are more confident of securing a uniformly better product in a modernized and air-conditioned plant.

Pearl Essence Finish

To many of us, mention of pearl essence finish brings to mind a lacquer finish, but inquiry develops the fact that pearl essence can be used with bases other than lacquer. One manufacturer says:

"Pearl essence can be used with bases other than lacquer. We have different types of pearl essence to go with different vehicles such as synthetic finishes, varnishes, etc."

Pearl essence is a favorite with some concerns for the finishing of cigarette lighters and bullet pencils.



The 1936 Cord front drive, designed in continental fashion, has Venetian blind louvers extending continuously around front and sides. The smoothly rounded one-piece hood lifts up to give access to the engine. One of the cars that's different.

1936 Automobile Show

Motor Car Designs, Colors, Finishes, Decorative Effects

by George D. Hirst

THE PUBLIC'S preference in the matter of automobile colors is definitely influenced by the general condition of business. In times of national peril or depression the public turns to the sombre colors in everything—clothing, furnishings, motor cars. Among other things, it has been observed that the carpet weavers always adopted dark patterns during a period of war and changed to the brighter hues with the restoration of peace and security.

During the depression in this country, automobiles painted black or in sombre colors claimed a very large percentage of the market, but now that business is returning to something approaching normal the demand is for bright, light color combinations. In 1935 for example, the percentage of bright colored cars sold was higher than for several years. This is borne out by a survey of the cars shown at the 1936 Automobile Show at Grand Central Palace, New York, November 2 to November 10. Lighter shades of tans, grays, blues and beiges were conspicuous.

The Cord was one of the show's sensations, so to speak. Designed in continental fashion, with Venetian louvers (lateral chromium grill bars extending all around the hood and radiator) concealed headlights, a dashboard of instruments which looks like the panel in a Douglas plane's cockpit, the front-drive Cord was a stop-look-listen booth at the show. Cords are available in any hue in the rainbow, according to your fancy.

The new Ford's hood is brought forward, an obvious improvement

in appearance over the 1935 line. Finishes shown were baked enamel; colors—tan, blue, gunmetal, gray-green, and black. Wheels and fenders are finished the same color as the body. In the de luxe bodies, moldings, instrument panel, hardware, steering wheel and gear shift lever ball are in a gray finish to harmonize with the interior. In the non de luxe bodies, interior hardware is in butler finish nickel.

Pontiac showed a de luxe coupe in a purple-maroon with a svelte long hood accentuated by the "silver streak"—a chromium grilled band running from the base of the radiator to the cowl ventilator. Also shown was a tan-beige cabriolet upholstered in tan Spanish leather. Doors have combination arm-rest-door handles. Pontiacs also are available in medium blue, dark gray, a very light grayish cream, grayish green, and black. Instrument dials are finished in translucent ivory with black figures. Throttle and light switch buttons are of translucent finish. In non de luxe cars the interior hardware and instrument panel button have black finish. The car heater has a green crackle finish.

Studebaker showed a striking 5-passenger yellow coupe. Hardware is conspicuously modernistic; chromium, of course. Bullet headlamps are finished in the same color as the body. Windshields are V-type. Ignition keyhole is illuminated.

A noteworthy Buick shown was a dark blue 8-passenger sedan. Cars in the diversified Buick line can be had in black, dark blue, gray-green, brown, beige-gray, beige-tan, medium blue, maroon, or a beautiful dark green.

Packard showed a sumptuous 12-cylinder sedan for seven passengers with a wheelbase of 144-in. in a medium blue exterior, the interior upholstered in blue broadcloth. Any color combination is available to purchasers. Upholstery is likewise optional as to color. Included in the options are combinations of lacquer treatments as well as metallic shades such as gunmetal.

Want to Sell in Brazil?

Mr. A. Brickman, representing the importing house of B. Herzog, Rio de Janeiro, is shortly to return to Brazil, and invites correspondence with manufacturers interested in introducing their line on the Brazilian market. Kindly communicate with A. Brickman, 2313 East 23rd St., Brooklyn, N. Y., or directly with B. Herzog, Rua General Camara, 211/213, Rio de Janeiro.

Pacific Exposition to Continue

The California Pacific International Exposition will re-open January 15, 1936, and continue to September 9. During the 1935 season, from May 29 to November 11, 4,784,811 persons visited this $20,000,000 Exposition. So successful was its operation that the Exposition has acceded to the nation-wide demand to continue during the major part of next year.

Continuous Glaze Spray

Again keeping pace with developments in the ceramic industry, The O. Hommel Co., Pittsburgh, Pa., has placed on the market a new nozzle to be used in continuous spraying of pottery glaze and porcelain enamel. The glaze spraying nozzle can be adjusted to spray in any position desired and is free from clogging, the tip being constructed to give long life. As an added convenience the spray can be gradually changed from flat to round, or vica versa, by simply twisting a handily placed screw.

Refrigerator Finishes—II

by A. O. Plambeck
Assistant Technical Director
Roxalin Flexible Lacquer Co.

The author lists and explains in detail the making of tests for nine major characteristics required of a very attractive and durable finish for the metal cabinets of modern refrigerators.

THE TESTING of finishing materials to determine their general practicability for use on refrigerator cabinets is not as easy as it might appear on first consideration. In general, accelerated laboratory tests can be used to give a good indication of the suitability of the material. The tests usually run by most important manufacturers are:

No. 1—Humidity Tests
2—Impact
3—Flexibility
4—Grease and Butter
5—Light Discoloration
6—Refrigerant Gases
7—Salt Spray
8—Print
9—Alcohol

No. 1—Humidity Tests

The finish, consisting of one coat of primer and two coats of lacquer enamel or two coats of synthetic enamel applied on bonderized steel, or steel which has been well cleaned so it is free from all grease, oil, dust, dirt and other foreign matter, shall stand exposure for a minimum of 300 hours in a humidity testing cabinet without breakdown. The finish is applied to the panel and allowed to dry or age for a minimum of 14 days at room temperature of 70°F. It is then placed in the humidity test cabinet in which the relative humidity is 98% to 100% at a temperature of 95° to 150°F. The exact number of hours required of the test, and the temperature, vary with different refrigerator manufacturers according to their own ideas and requirements.

The general method of running a humidity test is to keep the surface of the panel constantly wet by condensation of moisture through clamping the panel onto a surface which is kept at a temperature of approximately 10° lower than the chamber itself. The usual cycle of testing is one week, during which the panel is exposed as just described for 5½ days and then allowed to dry out over the week end for 1½ days at room temperature. The cycle is then repeated until breakdown occurs, which is indicated when the finish becomes rough, blistered, pitted, or scaly, due to corrosion or separation of the finish from the metal. The number of hours

is calculated as the time the panel was actually exposed to humidity. The drying out period is not considered.

SPECIAL NOTES ON HUMIDITY TEST: While the humidity test is one of the most important of a refrigerator finish, there has always been a certain amount of variation and discrepancy in the results obtained among different manufacturers due to various conditions entering into the preparation of the panels and the conducting of the actual tests. The following points are of considerable importance and should be carefully checked in order to secure accurate results which can be duplicated when check tests are run.

PANELS: The panels used in the humidity tests should be carefully cleaned so they are free from all rust spots, grease and dirt. The steel should be washed off with lacquer thinner or benzine and preferably sanded and thoroughly dried before application of the primer. Edges of the panel should not be rough; the edges should be free from rust and well sealed with the primer, as it is usually at the edges that corrosion starts. The ⅛-in. border from the edge of panels is generally overlooked on all panels used in the humidity test.

DRYING TIME: It is important that each coat of primer and lacquer enamel or synthetic enamel be allowed the proper baking time or air-drying time before application of the next coat, and then the whole panel should be allowed to dry out thoroughly for 14 days before putting it into the humidity apparatus. It has been found that materials fail on the humidity test if allowed only a one or two-day drying-out period, whereas if they are given a 14-day period of drying, they will stand the humidity test with 100 or 200 hours to spare.

DRYING OUT PERIOD: The breakdown of a finish in the humidity test can be accomplished much quicker if frequent drying-out periods are allowed. If the panels are kept wet on the machine for an indefinite time, they will stand up much longer on the humidity test than when the drying-out period is allowed after 5½ days exposure. It is important to see that a uniform procedure is carried out with respect to the drying-out process when making humidity tests.

TEMPERATURE CONTROL: It is important to keep the temperatures closely controlled both for the cooling on the back of the panels and the temperature of the humidity cabinet itself. An accelerated temperature of say 25° to 50°F. will cause considerable variation in results; therefore, the test is of no value for practical purposes unless the temperature is very carefully controlled within defined limits. Some manufacturers run a variation of the humidity test, which is called a water soaking test. In this test a panel finished in the usual manner is allowed to age 14 days and is soaked in ordinary faucet water, at a temperature from 70° to 100°F. A minimum of 300 hours immersion is required without any blistering or checking of the finish.

No. 2—Impact Test

There are a number of variations of this test, such as striking the finished panel with a ball-tip hammer of standard weight

dropped a standard height and striking the panel in such a way as to cause a deep dent in the middle. The finish on the panel so impacted shall resist fracture and shall not indicate brittleness by chipping, cracking or breaking loose. In order to secure uniform results the panel should be aged 14 days and held at a constant temperature of preferably 70°F. or ordinary room temperature before carrying out this test, which gives a good indication of adhesion and flexibility of the finish.

No. 3—Flexibility Test

The finished panel, aged one week or seven days at room temperature 70°F., shall be bent through 180° around a ½-in. steel rod without showing any cracks or checks.

No. 4—Grease and Butter Test

There are several ways of testing the resistance of a finish to grease and butter. One is to smear rancid butter or lard on a finished panel which has been aged one week at a room temperature of 70°F. The finish shall show no appreciable softening when the grease and butter have been in contact with it for 24 hours minimum. Some manufacturers run a variation of this test by using a rubbing machine the felt pads of which are saturated in butter and lard. With this machine they can apply a constant weight and rub a certain number of strokes over the finished panel. The finish shall not show a softening or wearing through after a certain minimum number of strokes have been applied, according to the requirements of the particular manufacturer who will use the material.

No. 5—Light Discoloration Test

Several methods are available for checking the color retention or effect of sunlight on the finish. One way is to expose the sprayed panel to direct sunlight for a minimum of 14 days. Since summer sunlight is much stronger in ultra violet rays, which have the strongest discoloration effect, each day from April 1st to September 30th is sometimes calculated as two days in this test. A minimum of 14 days without discoloration is generally required. Some manufacturers prefer running a fadeometer test with exposure to the ultra violet light secured from a carbon arc. After exposure to the ultra violet light for the required number of hours, as stipulated by the manufacturer, the finish shall not show any appreciable discoloration. The number of hours vary according to the intensity of the light given out from the apparatus.

No. 6—Refrigerant-Gas Test

The finished panel on which the finish has been aged one week at 70°F. shall not show any appreciable discoloration when exposed for a minimum of one hour to a concentrated atmosphere of the refrigerant used by the manufacturer. These refrigerants may be one or more of the following: Sulphur dioxide, isobutane, carbon dioxide, methyl chloride.

No. 7—Salt Spray Test

A finished panel, aged one week at 70°F., shall withstand exposure for a minimum of 300 hours without breakdown when subjected to a salt spray apparatus wherein a salt solution of the required strength is sprayed directly on the panel. This is a severe test.

No. 8—Print Test

There are several ways of making a print test and the proper test is best designed by the manufacturer to serve as an indication of the requirements of the finish for his particular production schedule. The test serves to indicate the length of time necessary for the finish to become hard enough to be wrapped and packed safely without marring or showing any marks from wrapping and packing. Tests can be carried out by subjecting the finished panel to wrapping with a piece of burlap or other cloth, or a piece of paper, and putting a weight of approximately 4-lbs. on top and allowing the weight to remain a certain number of hours. After this test the panel shall not show any appreciable marking or printing.

No. 9—Alcohol Test

The finished panel, aged one week at 70°F., shall not be affected or show appreciable softening when a mixture of equal parts of grain alcohol and water are poured on the surface of the panel and covered with a glass tumbler for four hours.

In Part III of this article, to appear next month, the author gives a summary of timely facts about certain refrigerator finishes, especially lacquers and synthetic enamels, their characteristics and the important features to consider when different kinds of metals are used for cabinets of these mechanical refrigerators.

Paralan is a thin transparent protective material for coating steel sheets, strips and wire to protect the clean surfaces from rust while in storage awaiting fabrication and finishing. It is easily removed, but is not harmful to the finish if traces of it remain in crevices, or anywhere on the surface.

Vitreous Enameling Laboratory

THE EXTENT to which a firm can go and has gone in fitting up its own modern laboratories with the latest equipment for research, testing, developing, and showing how to use its products, is revealed in the newly completed laboratories of the Chicago Vitreous Enamel Product Co., at Cicero, Ill.

The laboratories are unique because they have been designed to be the most efficient of their kind for the research, development and control of porcelain enamels, and for the reason that the method of construction used introduces a new and practical method for utilizing the unusual finishes and variety of colors offered by porcelain enamel as a building material.

Nearly 13,000-sq.ft. of porcelain enamel were used in finishing the interior walls, furniture, light fixtures, columns, shower and toilet stalls and, in two of the rooms, the ceilings. Two new types of finishes, developed primarily for architectural purposes were used. These are known as "satin matt" and "velvet matt." The effect obtained resembles very closely the names given these enamels.

It is in the analytical chemical laboratory that all raw materials used in the manufacture of porcelain enamels by this company are checked. A feature of this room is a recessed compartment of three divisions which contain blast lamps—both electric and gas—hot plates, water baths and other apparatus used in this type of laboratory. This compartment is lined with acid-resisting por-

celain enamel and the fumes from the operations are carried through a hood and vent of the same material.

The main laboratory (50x100-ft.) contains what is virtually three miniature enameling plants. One of these is devoted exclusively to testing frit smelts; another is used for accurate color matching, and one is used in connection with general enamel development, research and control. Physical tests not requiring a darkened room, such as crossbending, impact, thermal shock and tests to determine the coefficient of expansion and general workability of enamels are also performed here.

An outstanding feature of the laboratories is the fact that they are completely air-conditioned through the use of water from the company's wells. The filtering of air prevents any foreign materials from coming into the rooms. This unit is housed in the smelt record room, where records from every smelt made in the plant's production smelters are filed for ready reference.

The fastness of color or fading characteristics of any color or finish on any material can be accurately predetermined and gauged by testing the finished material in a Fade-Ometer—an expensive electrical machine which is generally found in modernly equipped testing laboratories.

The main laboratory room contains 5,000-sq.ft. of floor space, and its walls are completely lined with porcelain enameled panels, light blue at the base and gradually becoming darker as they near the top, interspersed with continuous strips of satin-finished stainless steel around the room. Starting at 10-ft. from the floor and reaching to the ceiling is a decorative frieze 3½-ft. wide, illuminated by indirect lighting.

How to Bring Out Beauty in Finishing Good Furniture

by Orrie D. Maal
Western Industrial Representative
S. C. Johnson & Son, Inc.

This article has been on my mind for several months, in fact ever since the trend for better and higher grade furniture began.

Fine wood finishing is coming back to its own now, and the finisher who really likes his work is getting an opportunity to show his real worth to the industry.

IF ANY ONE interested in beautiful woodwork will take the time to look around furniture and piano stores, into new buildings and cocktail rooms, they will find that once more we are on the way to using the finest woods obtainable, and to bringing out the natural beauty of these woods by putting on a fine finish, with plenty of depth and body.

Often I've wondered why the beautiful grain and texture in wood was shaded up so dark that its natural beauty was destroyed. Cheaper woods could have been used just as well. A manufacturer using high grade woods was at the mercy of those manufacturers using inferior grades of lumber due to the fact that after shading, the dark-finished cheap wood looked about the same. Many purchasers of such cheap goods never knew the difference and actually thought they were getting a bargain on account of the lower price.

Finer Quality Finishes Demanded

The general public is getting wise now to the fact that construction, finish, and quality of the lumber and veneers have something to do with the lasting quality of the furniture, piano, or interior trim, etc. Why use high grade veneers and lumber, and pay good money for them, when cheap veneers or lumber would do just as well?

It is easy enough to finish some article in the ordinary run, but when articles begin to come through with all these fancy woods, including crotch mahoganies and walnuts, the finisher can begin to show he really knows his business, and I am sure most of them would much rather work on this class of merchandise.

As every one familiar with high grade furniture and veneers knows, all of these woods do not run the same color in their natu-

1-2-3-4-5-6-7 Points About

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QUICK BAKING SYNTHETIC

1. Excellent adhesion to aluminum, brass, cast iron, chromium, copper, nickel, steel, tin, zinc, etc.
2. Porcelain-like in appearance.
3. Rugged, elastic, durable finish.
4. Covers well in one coat.
5. Retains color with age and under heat.
6. For spraying, dipping, brushing, and coating machine work.
7. Bakes at 225°F. in only one hour.

Color card, specimen on wood or metal and liquid sample will be sent on request. If you prefer, we'll be glad to finish any specimen you furnish. Such service is free.

HILO VARNISH CORPORATION

HILO

70 Years Experience in "Better-The-Finish"
42-60 Stewart Ave. Brooklyn, N. Y.
Chicago — — Boston — — Philadelphia

Varnishes Enamels Japans Lacquers

ral state, and that's where real finishing starts. First of all we know that no piece of merchandise whether radio cabinet, showcase, or household furniture, should reach the finishing department in any condition other than as nearly perfect as possible. This applies particularly to smoothness.

Choosing Your Color Scheme; Stain; Blend; Shade; Fill

Now to give an idea of how to proceed on dining or bedroom suites with crotch mahogany or crotch walnut fronts. If the color decided upon is such that you want to bring out the crotch as light as possible without bleaching, then the procedure should be as follows:

Pick out for the general color scheme a medium dark spot on the crotch veneer. This can be obtained by taking one of the doors or drawer fronts and wetting this with gasoline. Then you can match your stain for the frame work and ends according to the particular color picked out. If either red or brown is desired, make your pick accordingly.

Use whatever kind of stain you desire, but do not stain the crotch. When the stain is dry, proceed with a good filler, making sure the color of the filler blends in with your color scheme. Fill the whole works, crotch veneer and all. If anyone desires to washcoat the stain before filling, it's okay. It will depend a whole lot on the type of stain used and the particular wood in the frame of the suite.

More Blending; Sealer Coat Lacquer or Varnish

When the filler is dry the real blending job starts. Probably several colors will appear in the crotch veneer, such as browns, blacks, and white saps in the walnut; and deep reds, yellows, and white saps in the mahogany. In the old days,* we proceeded to shade up all these different spots into a blend, by either using a strong solution of water stain to which a little alcohol had been added, or by making up stains from japan colors cut with naphtha—all this directly over the filler. Today this is easier; proceed as follows:

Use a good permanent stain in a spray cup and proceed to blend in. This takes a good man, as here is the place where the color is made or the piece ruined.

When you feel that sufficient shading has been done, proceed with your shellac or sealer. When this is dry, sand; then, using a transparent lacquer shading stain, finish any blending necessary which may have escaped you when using your permanent stain over the filler. Then you follow up with as many coats of lacquer or varnish as desired; and finally, rub dull or polish.

If the woods to work on have a nice ribbon grain, it depends entirely on the color desired how to finish them. For instance, lots of manufacturers are using satin woods, oriental walnuts, etc. Most of these woods should be finished as near natural as possible, also clear, to bring out the beauty of the wood. When finishing these woods, apply a wash coat of sealer, lacquer, or shellac; sand and then proceed to fill, again using a filler picked for the desired color.

---

* When I mention all these things about the old days some of our readers may think I am an old man. I feel far from old, however, starting when 14 years old takes me through a long period of finishing.

Are you harboring a

POTENTIAL Explosion

in your plant?

Many Finishing Room ovens and heaters have been installed in past years with no regard to fire hazards, or safety.

Proper ventilation, removal of solvents, use of automatic safety devices, not only reduce your risk, but actually pay returns in better products obtained from modern ovens.

Our wide experience in modernizing existing oven installations and designing new ones is available to you without charge. Write us for an appointment to talk it over and see whether or not you can improve your Finishing Room conditions.

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"Pioneer Builders of Air Heaters"

Staining can be done over this filler, with permanent stain to any desired shade. This applies to two-toning. However, a lot of finishers would rather do the two-toning before filling.

Now a word about the lacquer or varnish used over these different woods. We all know that varnishes and lacquers come in different shades, from water white to deep ambers. Naturally this should be taken in consideration when determining the color scheme.

Make Tests for Color

Make your tests on pieces of wood and veneer large enough to give you the real color effect of the finished article, such as old drawer fronts or doors. A small piece is often very deceiving.

Some beautiful effects can be obtained by using satin woods, oriental walnuts, mahogany, etc., in combination color schemes with blacks or pastel shades.

Naturally all the above requires a lot of experimental work on the part of the finisher but it's interesting, and after all it will pay in increased sales and in the deep feeling of satisfaction when, upon going home at night, you know that something real has been accomplished that day instead of just doing the same old thing over again.

Crotch Mahogany; Butt Walnut

Coming back to crotch mahoganies and walnuts, or any butts or hearts of a log or stump, any manufacturer or finisher who has had experience with these has had the following trouble: Mahogany running too red or too black; walnut running all kinds of colors, and the veneer would not stand any lightening up by bleaching.

We used to run mahogany so red it looked like a deep purple without any finish on. In a case like that, only one thing can be done: Washcoat the veneer, sand and fill; then use either a yellow or green to cut down the red—either a spirit or permanent stain, with the latter preferred. On the blacks, use a red or orange.

As to the use of water stains on any of heartwoods, my own experience does not allow me the use of same. It causes blisters and cracks. Some manufacturers absolutely refuse to water rub these crotches and butts. Every finisher knows nothing can beat water rubbing, but on investigation, I find water gets under moldings and causes trouble on end grains and backs. The natural suggestion would be to coat the backs and ends sufficiently to stop this, but nowadays we run across veneer so thin that when the right light is on it, you can see the core-wood. Each manufacturer should know what his particular veneer will stand, what kind of glue was used, etc.

Using Bleaching Lacquer

Another way to keep butts and crotches from getting darker than the original wood is to coat the veneer, before filling or staining, with what is known in the trade as a "bleaching lacquer." This particular lacquer contains no gum of any kind, and has no body as far as showing any is concerned. When applied to the wood it will keep the oil from filler out of the wood, and will keep the original color even after filling.

This same lacquer can be used on the orientals, satin woods, etc., to keep them light. We used it

You Can't Hit Live Game with Poor Ammunition Nor

Sell a Product with a Poor Finish

There is a certain point to which you can go in economizing on finishing materials . . . beyond that point additional savings may easily be sales suicide. We maintain a creative studio to help solve such problems for manufacturers . . . we create appropriate and practical finishes for metal, wood and plastic products of all kinds . . . finishes that not only add sales appeal but reach the practical minimum in costs. This service is rendered without charge to reputable firms . . . . . Write us for details.

No obligation whatever.

Rockford Varnish Co.

ROCKFORD, ILLINOIS

Kindly mention INDUSTRIAL FINISHING when writing advertisers

years ago on Huguenot or French walnut and birdseye maples, directly on the veneer.

When Glue Causes Trouble

Some years ago, while I was employed by a large manufacturer of high grade furniture in Michigan, we discovered that a certain animal glue caused our crotch mahogany veneer to get much darker in color. I am not a glue man but I've learned by much experience that a lot of good veneer can be spoiled by the use of too much caustic soda in the veneer room. Also, a lot of trouble is caused by glue bleeding through to the face of the veneer. This causes poor filling and leads to many other troubles.

What I am trying to convey with the above paragraph is this: that from my own knowledge I've seen finishers lose their positions for troubles that really should have been traced elsewhere—and after all, no high grade finish can be made unless the foundation is right.

Mystery Spotting Traced Down

To my way of thinking it pays any finisher to experiment during his spare time. Try out new theories. Of course, you may say: "We can always call in the finish manufacturer." That's okay if they can send their man out right now, but supposing he is far away and cannot come for a week? Nothing like being able to do these little jobs yourself; and the only way to find out is by experience. If you discover once where your trouble lies, the next time it is easy.

To illustrate my point, I was called into a large factory several years ago. They were having trouble with the lacquer drying only in spots. The lacquer company's salesman was there, and he was rather put out, even claiming that someone had doped the lacquer to get him in bad. We traced the trouble down; tried the stain, the filler, and the lacquer, and found out they were okay. The only thing left to investigate was the veneer. We found they used some kind of grease on their caul boards in the veneer room, and had used it generously. After eliminating this trouble, everything was okay.

I've brought up this glue business for one purpose only. Get the goods to the finishing department as nearly perfect as possible, and note the difference in your finish; also, note the money that will be saved, as a smooth surface will take less material than a rough one.

One more item regarding this article: It is a good idea to keep the first suite or piece at the shading booth as a sample to go by. If this procedure is followed, all pieces should look alike as far as color is concerned. Even if 1,000 suites should be in one cutting, this is the guide to follow. I've tried to give a general idea of how to proceed. I hope this is plain to the average finisher.

TECHNICAL ADVISERS

If your finishing problems pertain to Metallic Finishes—such as Gold, Silver, Antique, Copper and various other colors and your present source does not meet your exact requirements, please address us for complete technical advice—as the authority on Metallic Finishes for 32 years. The Originators of Puritan Silver Paste, Otto A. Both Corp., 50 Hartford st., Boston, Mass.—Adv.

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Oriental She-Lak looks like pure shellac. It reduces with alcohol, sprays smoothly, dries quickly and sands crisply. It has excellent resistance against blushing, and works well under lacquer or varnish.

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CHICAGO

Why and How . . .
Hats Are Lacquer Sized

by Ray C. Martin
Consultant on Finishing

PRIOR TO the advent of nitrocellulose lacquers, the sizing or stiffening media for hats was animal glue. This water-soluble glue size was very difficult to work with, particularly in warm weather. Often times its odor was objectionable, especially when the work was done in rooms where women were employed. On very humid days, the glue would not stiffen the hats properly, thereby making it necessary to suspend operations until the weather changed. Often times the glue soured.

In the past ten years lacquer sizings, based on nitrocellulose or nitrated cotton, came into prominence and have been used in increasing amounts until today we find they have practically replaced animal glue in the manufacture of such millinery.

Quite naturally cost is a big factor in the hat industry, and whereas lacquer is more costly than glue sizings, there must have been good sound reasoning to warrant the change. Among the many advantages of lacquer sizings for this work, I wish to call attention to the following: 1) The demand for a water-white sizing with the trend toward pastel shades, especially for such fibers as visca braid; 2) The resulting weight deposit of lacquer is much lighter than glue sizing, and the stiffening and tautening affinity is far superior to glue sizings; 3) Waterproofness and speed in turnover are much greater than when using glue sizings.

Lacquers for use as a stiffening agent require careful selection of the ingredients used in their manufacture, and they must overcome all the objectionable features of the glue sizings. Lacquer sizings dry quicker than glue sizings, but in drying they must not blush, as the formation of a white cloud would cause rejection of the hat.

"Bridging" or "windowing," which is a bright or glossy appearance where the lacquer has filled a crevice and appears as a "window", (a common fault in glue sizings) have been overcome in lacquer sizings. The odor of lacquers, while presenting a different type of odor than glue, is not objectionable. The lacquers used for this work do not contain benzol or highly toxic solvents or diluents.

Where Unusual Care Is Necessary

In the handling of lacquers for the hat trade, care should be exercised in the following instances: a) A standard measuring device

When the frame is ready S-W finishes are applied

Says Leonard Elms, general superintendent, "It's the combination of easily applied finishes, beautiful textures once they are applied, and the aid of Sherwin-Williams finishing service on any of our finishing problems that makes these lacquers . . . varnishes . . . and stains so valuable."

All industry is adopting Ivers and Pond's attitude on Sherwin-Williams finishes and Sherwin-Williams service. Stains, lacquers, fillers, primers, sealers, varnishes, enamels, plus wide experience and research knowledge are part of the Sherwin-Williams finishing engineering service. The Sherwin-Williams Company, Cleveland, Ohio, and all principal cities.

SHERWIN-WILLIAMS FINISHES

SEE THE SHERWIN-WILLIAMS FINISHING ENGINEER

should be used to mix the clear lacquer with the thinner; do not guess at proportions. b) After the hat parts have been dipped into the properly-mixed lacquer and thinner, they should be permitted to drain, and the wet lacquer allowed to dry naturally—by evaporation. Never attempt to hasten the drying by placing coated articles before a fan or open window. c) After the dipping tank has been used, cover same reasonably tight to preclude any unnecessary evaporation which will "thicken" the nitrocellulose solution and necessitate a greater addition of thinner, thereby causing a lessening of the tautening or stiffening effect, because less base material is applied. This properly covered container will also reduce the fire hazard. d) The weather is always a factor over which there is no control. On exceptionally humid days blushing may result. In this event, lacquer retarder, which is a high-boiling and slow-evaporating combination of liquids, will eliminate the blush or whitish deposit. e) After hand dipping and when the hats are hung up to dry, care should be exercised to distribute the drip by turning the hat form. This will equalize the stiffness and weight of the hat; otherwise the drip edge would be stiffer on one side.

The type of sizing for the various hats are as follows:

Baku	Cl.Var.
Braid, hair and straw	Cl.Lac.
Bead, Indian	Cl.Var. & Co.En.
Chips	Cl. & Co.Lac.
Cotton	Cl.Lac.
Fabrics	Cl.Lac.
Felts	Cl.Lac.
Harvest	Cl.Var. & Co.En.
Hemp	Cl.Lac.
Linen	Cl.Lac.
Metallics	Cl.Lac.
Milan	Cl.Lac, Var. or Bl.En.
Panama	Sm. & Po.
Pan Dan	Cl.Var. & Bl.En.
Peanit	Cl.Var. & Co.En.
Petaline	Cl.Lac.
Rayon	Cl.Lac.
Toyo	Cl.Lac, Sm, Co.En.
Tuscan	Cl.Lac.
Visca	Cl.Lac.

Abbreviations: Clear, Cl.; Lacquer, Lac.; Varnish, Var.; Black, Bl.; Colored, Co.; Enamel, En.; "Smear", Sm.; Polishes, Po.

Why They're Dipped; Not Sprayed

Some readers may wonder why the lacquer sizing is applied to hats by dipping instead of by spraying, which would seem to be more in keeping with modern methods.

As you can appreciate, in the manufacture of straw hats there is about ⅛ or ¼-in. braid which is sewed together by machine into the brim (which is separate) and the crown (also separate). These pieces are then dipped individually by hand immersion—about a dozen or so at a time. They are then placed on wooden pegs to dry. In the course of drying there is a point of natural drip; this must be evenly distributed so that fat edges or partial drops may not form and thus unbalance the

hat by virtue of an uneven distribution of weight through such drips. After these two sections are dry, they are sewed together and placed into a hydraulic press; then blocked and dressed.

Coating by spraying has been investigated and found to be unsatisfactory because: 1) The amount of air required to atomize the lacquer is excessive when one considers spraying onto such a light weight material surface, and 2) the deposit of lacquer applied by spraying would not be sufficient to add weight because only a thin film would be applied, whereas by dipping, lacquer seeps into every crevice of the hat.

While it is true this system seems antiquated, it presents the best method of coating such surfaces. In the course of dipping, the hats are permitted to drain for a short time and are then reversed so the drip is changed. In the course of handling the time element is controlled.

Finishing Steel Doors

HOLLOW steel doors for the new Hayden Planetarium in New York City were built and finished by a steel door and trim company in Long Island, N. Y. The doors were finished in a deep royal blue synthetic enamel which was selected for its excellent appearance and durability, the latter meaning particularly resistance to usage by visitors and the service work of employes about the planetarium.

In preparation for finishing, the metal surfaces were thoroughly cleaned. Shop workmen were particularly careful to clean off all traces of oil and grease film left from the oily rustproof coating on the metal sheets and the oil from machines used for pressing the metal into shape.

A light mist coat of enamel was first sprayed on and, after a period of five or 10 minutes, this was followed with a full wet coat. This procedure insures a perfect bond between the synthetic enamel and the smooth metal surfaces, and it tends to prevent runs or sags resulting from the application of a heavy single coat directly onto bare metal. In ordinary metal finishing with synthetic enamels, one or two coats are sufficient, due to the high solid content of the enamel.

Rubbing a finished door with fine pumice stone and oil to kill the high gloss and give the surface a satin-like sheen. Light hand rubbing follows machine rubbing.

Each of the two coats used in finishing the planetarium doors

(Continued on page 40)

What's New « «

Paint Filters for Spray Booths

The DeVilbiss Co., Toledo, Ohio, has developed a new, simplified spray booth paint filter . . . . for the purpose of retarding the discharge of heavy, sticky paint residue into the exhaust chamber of the spray booth or into the exhaust pipe leading from the spray booth.

Used in standard spray booth installations, the equipment has been found to have a filtering efficiency of as high as 95 to 99%, therefore it is suitable as a means of reclaiming, for reuse, the paint solids which otherwise would pass out the exhaust pipe. The filter is not intended for use in the spraying of lacquer.

To hold the filter units an arc-welded metal frame is inserted in the booth, replacing the standard distributing plates. Into the frame has been built the required number of openings to accommodate the necessary filter assemblies held in place by means of spring clamps.

These filters are made in several sizes.

Each filter assembly is contained completely in a sheet metal frame open at one end and provided with two handles. The bottom end of the filter frame is left open to facilitate the draining of accumulated paint into the drip pan, and for the easy removal of the baffles for cleaning.

Cleaning of filter assemblies is easily accomplished. The complete filter assembly may be immersed in a suitable solvent or the assembly may be taken apart, each part cleaned and reassembled. Reassembly is a simple process as the parts are so designed that they cannot be assembled incorrectly. If conditions justify, the booth may be operated with two sets of filter assemblies. This would permit the cleaning of one set of filters while the other is in use, and greatly minimize the time spray booth would be out of service for cleaning.

Photo Stencil Service for Silk Screen Printing

The Naz-Dar Co., 4014 N. Rockwell St., Chicago, Ill., has just installed modern photographic halftone equipment which, combined with the company's wide technical knowledge of photographic silk screens, places them in position to supply the silk-screen process finisher and printer with an accurate photographic silk-screen plate from which to print the finest detail, as in print type, pen and ink drawings, or photographs by the halftone process. The photo stencils are easy to operate. Each screen plate prints perfectly and re-

SILVER DOME COACHES

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BERRY FINISHES

Silver Dome Coaches must be made to "take it"—to stand up under days of exposure in snow, rain, sleet and broiling sun. That's why Berry Finishes are specified. They give *results!*

BOXX Primer and Surfacer seals and protects—air dries (even over grease) to recoat in 4 hours. Sprays smooth, too, and saves sanding. Amberry Speed Line Enamel slashes refinishing costs—cuts production time—yet possesses sensational durability.

These, and the many other Berry products, can solve your refinishing problems—save you money—bring better results. See for yourself. Get complete details from our Industrial Division. Address:

BERRY BROTHERS

PAINTS • VARNISHES • ENAMELS • LACQUERS

DETROIT, MICHIGAN ★ WALKERVILLE, ONTARIO

produces copy exactly with clean-cut lines. If handled properly, from 5,000 to 10,000 impressions may be secured from each screen. Perfect register is assured on multi-color jobs.

The customer must submit his own copy in black and white. Since the camera reproduces faithfully, an excellent finished original is essential. Copy need not be exact size, as the Naz-Dar Co. is prepared to enlarge or reduce same.

Naz-Dar photographic silk-screen plates are made in all sizes up to 28x44-in. Screens are delivered, mounted ready for printing.

First-Aid Kit

A new first-aid kit, designed to meet the specifications of leading industrial medical directors, has been adopted as standard by the Standard Oil Co. of New Jersey and other large American industrial companies.

The special feature of this new kit, which is known as the "Brac-Kit" and was developed by the Davis Emergency Equipment Co., 55 Van Dam St., New York, N. Y., is that it can be permanently installed in a given place, but its contents are instantly available in emergencies and are protected from contamination and damage when treatment is being applied.

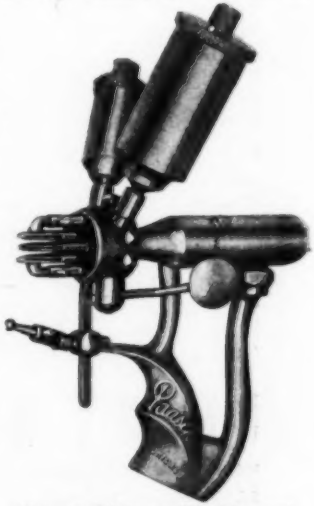
The kit consists of two baked-enamel steel cases, an outer case which can be permanently attached to a wall by means of screws, and an inner case which is normally kept inside the outer, where it is held in place by a simple lock. When needed, the inner case can be unlocked by a twist of the handle and carried, with all necessary first-aid supplies, to the scene of the accident.

The Brac-Kit contains ten D-carton first-aid units, each of which holds enough material to serve for several treatments. The exact assortment depends upon the industry in which the kit is to be used, but a widely accepted assortment is comprised of adhesive plaster, gauze compresses, individual swabs of Isodine (the new iodine antiseptic), individual tubes of Tannoid (tannic acid treatment for burns in a water-soluble jelly), ammonia inhalants (for fainting), eye dressing, and a tourniquet.

Multicolor Striper

In calling attention to its improved Multicolor Striper, the Paasche Airbrush Co., 1917 Diversey Parkway, Chicago, Ill., says the new tool "applies two colors—two or three lines—in one striping operation. Made for applying two, three or four colors at one time. Adaptable for any surface."

The Type 3LS 3-line multicolor striper applies clean cut stripes on smooth or uneven surfaces. Accurate control of striping material is insured by the handy pistol grip and the special easy-thumb operating lever. Ad-



Makes multiple parallel stripes—of different color if desired.

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A PROPRIETARY SOLVENT

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230 Park Avenue
NEW YORK, N. Y.
and TERRE HAUTE, INDIANA

justing screws control the flow of color to each striping nib.

The two outside striping nibs slide back and forth to fit the contour of the surface being striped . . . . is easy to operate on horizontal or vertical surfaces. Its revolving, adjustable guide is suitable for any position, any surface. Special striping nibs can be designed to fit any special requirements.

Electrically Heated Paint Remover

After publication of an inquiry on this subject in September issue, page 36, we learn that such a product is made by The Ridgely Trimmer Co., Springfield, Ohio, who have written us as follows about their No. 225 electric Burn-It-Off torch outfit:

"We have successfully manufactured this device for the past six years and successfully sold several thousand of these handy machines. We strongly recommend them for use

Takes current from extension cord.

in removing paint from interiors; however, they are hardly adaptable for outside work such as removing paint from the sides of a dwelling.

"The machines are not as speedy in operation as is the ordinary blow torch; but they do have the advantage of extreme safety in usage, and also the fact that in using the Burn-It-Off Torch the heat is directed only to the spot where the paint is to be removed, whereas with the regular blow torch it is very difficult to prevent burning off surfaces adjacent to the spot where the user wishes the paint removed.

"In short they should not be considered as a substitute for a gasoline blow torch, but for many purposes they are much more satisfactory than is a blow torch."

Water-Dilutable Resins

New water-dilutable resins offering important improvements in the manufacture of laminated sheet stock and rolled and molded tubing, have been announced by Bakelite Corporation, 247 Park Ave., New York, N. Y. This new development reduces water absorption of laminated materials, thus prolonging life and strengthening electrical properties. Varnishes based on these water-dilutable resins, employed alone or in combination with other types of resinoid varnishes, offer interesting possibilities to industries concerned with the problem of corrosion and resistance to chemicals.

This development has made possible the manufacture of "refinishing" laminated material for table tops, baseboard trim, wall paneling, etc., where resistance to water staining is essential.

A hand pump for withdrawing finishing liquids, oils and thinners from drums or other containers, operates in such a manner that no liquids touch any moving part of the pump. Instead of pulling as is usual with ordinary pumps, this pump pushes the material out to suitable piping. The pump is not very large and not expensive.

Walnut hulls were formerly used in the extraction of dye material, but with the coming of mineral dyes, however, domestic dyes of vegetable origin have practically disappeared from the market. Present-day lists show no dyes manufactured from walnut hulls.

Beauty may be only skin-deep

. . . BUT

A great many sales depend on beauty or appearance.

No matter how well your product may be made, if it is not pleasing to the eye, it may be pretty hard to sell.

Egyptian Finishes have been giving eye-appeal to a variety of products for over fifty years and today there is a wider choice of finishes than ever before from which to choose.

Transparent lacquers . . . colored lacquers . . . colored enamels . . . synthetics and numberless novelty finishes, all designed to give your product beauty and protection.

The next time you are in the market for finishes for your present product, or perhaps a new item in your line, ask us for suggestions. We may be able to help you.

EGYPTIAN · LACQUER

THE EGYPTIAN LACQUER MFG. CO. ● 90 WEST STREET, NEW YORK

Finisher's Putty-Filler-Surfacer

Plyable Lak-Er-Fil is a putty-filler-surfacer for use in connection with new and repair finishing in the manufacture of all kinds of furniture, picture frames, refrigerators, boats, and many other products. It is made in any color, texture, and consistency desired for fast and slow drying; useful for filling holes, checks, cracks, or building up damaged places; shrinks less than 1%. After it has become properly dry it is waterproof and also proof against damaging by oil, gas or ammonia; can be machined, sanded and finished like adjoining surface; is unaffected by lacquer, varnish, or synthetic finish coats; can be used on metal, clay or concrete products as well as on wood. A product of the Plyable Lak-Er-Fil Co., 1212 Vermont Ave., Lansing, Mich.

Automatic Turn Tables

The perfection of a new automatic turn table to be used in a spray booth for finishing all types of industrial products has been announced by the Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill. The turntable can be revolved in front of the spray operator at will by simply pressing a foot pedal controlling the motor.

It's turned by compressed air.

The unit is operated with either air or electric motor in the various types of motor specifications as desired. The illustration shows the standard air motor type with air pressure gauge and air regulator used to control the speed of the motor. A simple turn of the regulator accelerates or retards the revolutions of the turntable.

On the standard table shown, the diameter of the revolving disc is 16-in., while the height, correct for the average spray booth job, is 2½-ft. Special turntables with larger discs and of any height can be built to suit the needs of individual users.

Finishing Steel Doors

(Continued from page 33)

was baked at 225° F. for 1½ hours. The manufacturer's recommendation is to bake the finish at least 200° F. for a minimum of one hour. Continued baking tends to make these enamels tougher and harder rather than brittle, and it increases their resistance to moisture solvents and mild solutions of acids and alkalies.

The satin-like finish specified for these doors—so the finish would blend properly with the brushed aluminum ornamental parts—was obtained by rubbing the final baked coat with pumice stone and oil. Rubbing killed the gloss and produced a more refined type of finish smooth and pleasant to the touch. The heavy rubbing was performed with a pneumatic portable machine as shown in the accompanying illustration. This was followed by light rubbing by hand.—B. STUBBLEFIELD.

Cleaning Job Saved on Pressed Metal

In the September issue of INDUSTRIAL FINISHING, an item appears on page 54 under the subject "Cleaning Job Saved on Pressed Metal Finishing." We are metal fabricators and are always interested in any new lubricants. It has been our experience that before a product can be finished, any lubricant used in the drawing operation must be cleaned off. Therefore we will appreciate it very much if you give us the name of the manufacturer of such products, so that we can take the matter up with them to see if they have a product that will permit us to paint over these lubricants.—S. B. Co. (Metal Vaults).

A second letter from the production manager of the firm that made the original inquiry, as quoted in part by our editorial in September issue, reveals the following later developments along this line.

"Answering your letter of November 8th, we have found a satisfactory answer to our particular problem about which we contacted you. We have found that a mixture of 80% coal oil (kerosene) and 20% Lanolin sufficiently lubricates our forming dies and does not require a formal cleaning operation prior to enameling."

A communication from the Standard Oil Co. of New Jersey (Lubricating Department—Engineering Division), in reply to our letter on this subject, follows:

"We have your letter of October 31 and thank you for calling our attention to the development of a lubricant for stamping operations which does not require cleansing preliminary to enameling.

"We are regularly furnishing to certain automotive body builders a soluble oil known to the trade as "Kutwell 40" which is used both as a rust preventive and a lubricant. The steel plates, after pickling, are immersed in a tank containing one part of Kutwell 40 to ten parts of water, and after the water has evaporated a rust-preventive lubricating film is left on the parts.

"To our knowledge, it is advisable to clean the stamped parts either in a caustic solution or in hot water before enameling, if best results are desired.

"We do not know who manufactures and sells the product known as "Super Soluble Oil." In case you find the manufacturer of this product, we would appreciate hearing from you."

Questions « Answers

Finishing Carvings and Carved Feet

My work includes finishing carvings, such as face moldings, drop moldings, and carved feet for upholstered furniture. The facings are about $\frac{7}{8}$-in. thick, 2 to 6-in. wide, and from 5 to 14-in. in length. Drop moldings are from 1 to 1½-in. wide, and 10 to 16-in. long. The feet or legs are of the

Chesterfield type. I spray finish everything. Judging by what I have seen of dip finished work, I do not think that many of the things I have to finish could be dipped.

At the present time, for finishing legs and drop moldings, I use revolving wheels of various sizes into which are driven nails with the points up, and anywhere from 5 to 20 legs are placed on the wheel and finished at one time. This method works fairly satisfactory and I can coat from 100 to 500 pieces an hour, depending on the type of leg, but I feel that there is probably some better way of doing the legs; also the drop moldings. In regard to the facings, I have never been able to devise any method that would work at all satisfactorily.

The process I use in finishing is as follows: 1) stain with water stain, 2) sand, 3) apply sanding sealer, 4) sand, 5) shade with shading lacquer, 6) two coats of finish.—C. L. Y.

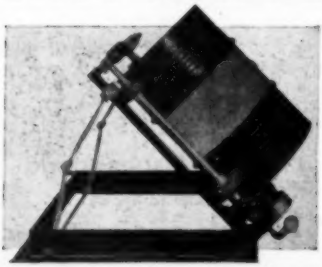
For spraying the thin moldings I suggest you lay them out on a board that has sharp nail points sticking up through it—or stick them crosswise onto a length of 3-in. masking tape, and lay this on a board—and cut down your air pressure while spraying these light carvings to avoid blowing them out of position.

Your present method of holding the Chesterfield feet seems to be all right for spraying. However, I would apply the stain by dipping them. Use a pair of home-made tongs (giant size sugar tongs) to hold each foot while you dip it in a tank of stain. Then lay the wet stained feet on a course wire mesh screen stretched across the top or near the top of a drain tank.

Instead of placing the chair feet on a wheel for spraying, I suggest driving a nail, screw, hook or staple into each one so you can hang a row of them to a horizontal bar which has properly spaced hooks. The bar is supported at each end, but is removable so it can be turned to permit spraying from the opposite side—and, when the spraying is completed, it can be removed and hung on a rack while the parts dry. Several prepared bars can be used in the process.

In your finishing schedule you should arrange to cut out one of those sanding operations. Use a stain that doesn't raise the grain —A permanent non-grain-raising stain, or a spirit stain that is as near as possible a non-fading material. Do not sand after staining. When the stain is thoroughly dry, spray on a sizing-sealer

JIFFY CLEANER



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No. 1900 WATEROIL RUBBING OIL	(Eliminates haze or bloom)
WATEROIL STAINS	(Acknowledged leader in stains)
DOLCO FILLERS	(Quick drying, *real* fillers)
LIGHT-FAST SHADING STAINS	(Eliminate fading, blend perfectly)

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INDUSTRIAL FINISHING

44

The Centrifugal Enameler in Daily Use

by Charles F. Moss

Enameling Superinten

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And here's 3-year's experience.....

to guide you in your selection of the Filwhirl Enameler as the most economical equipment for product finishing, coupled with finished samples of your own product as the determining factor. Charles F. Moss, enameling superintendent, states his experience in unmistakable terms—see June issue of this paper. And, we support the facts by taking samples of your product and coating them in the Filwhirl, returning them for inspection with full information about the machine, the method and the cost.

THE LEON J. BARRETT CO., Worcester, Mass.

coat of shellac or lacquer. Then sand lightly with No. 4/0 or 5/0 sandpaper. If necessary or desirable, use the shading stain at this time. Then follow with two coats of clear lacquer.

On light colored finishes, where you want to keep the wood as light in color as possible, spray first with a clear shellac or bleaching lacquer. Then sand and apply shading stain, wiping it off the high places while it is still wet, or steelwooling it lightly after it dries. Leave the deeper places dark, if you wish. Then follow with two coats of lacquer.—C. F. EDWARDS.

Coating Drawer Partitions

Referring to N. W. F. Co's. inquiry in November issue, pages 52 and 53, wherein they ask for a low-cost method of applying a single opaque color coat to 3-ply fir and spruce drawer partitions about 3/16-in. thick, in widths of 3 or 4-in. and lengths of 11, 13 and 15-in., I suggest spraying them.

Here's the way we'd do it: Place a neat stack of 25 or 30 or more of them on the turntable—all pieces in the stack being the same width, and the edges and ends neatly evened up flush so the stack looks like a single plywood block. Spray around the edges of the entire stack and then, holding the gun high and pointing it straight down, spray the top side of the top piece on the stack. A helper quickly removes the top piece—holding it by finger pressure at both ends (which don't show) so he doesn't finger-mark the edges or side—and carefully places it in a multiple-deck portable rack where it rests on its unfinished flat side. Spraying the top pieces and removing same continues until every piece is sprayed. This work goes forward rapidly.

When the finish is dry, gather the pieces together again, stack them with their unfinished sides up, and spray the remaining unfinished side of every piece the same as in the first spraying. The helper puts them away in the rack as fast as they are sprayed; and this time, when they are dry, they are ready for use.

The merits of this method are that the job can be done with your present regular equipment and workmen; and if it's handled right, you will get the work out rapidly and there will be no marks of fingers, racks or machine to contend with.—J. O. R.

Bread Board Finish

We are looking for a suitable finish to be used on walnut bread boards. These must be stained to match a walnut tray. We had thought of using a paraffin oil with some harmless coloring material in it and are wondering if you know of any such product or could recommend any other method of finishing.—K. E. C.

I suggest staining first to give a satisfactory, permanent, uniform color. When thoroughly dry, add a coating of linseed oil—an oil finish to withstand the service that bread boards are subjected to, as you would not want a hard-film. To make the surface more finished in appearance and presentable for sale, you might wax it too.—L. C. MOORE.

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222 East Ohio Street **Indianapolis, Indiana**

Letters from Readers of "Industrial Finishing"

The names and addresses of firms or individuals whose letters and inquiries appear in this department may be had by writing this office, or letters addressed to them in care of this office will be forwarded promptly.—The Editor.

Agitator; Pump; Strainer

We are interested in purchasing a mechanical agitator, also a pump and strainer for use on one of our large enamel dip tanks. The dip tank is a portable unit mounted on wheels, and has a capacity of 120 gallons.

It occurred to us that some of your advertisers might manufacture equipment of this kind, and we would appreciate your sending the inquiry to them, asking them to send us descriptive matter on their equipment, together with prices.—T. R. B. Co. (Sheet Steel Specialties).

Ningpo Lacquer

We have been referred to you as a possible source of information regarding "Ningpo Lacquer," a Chinese oil-base lacquer. This material is of interest to us, and we are writing you in an effort to get some information regarding the material. We would like to know who makes it, cost of same, how it works and what it does in comparison to our regular lacquers, drying time, etc.—S. A. Chemical Co.

EDITOR'S NOTE: In the Trade Mark Directory of the National Paint, Varnish and Lacquer Association, the trade name "Ningpo" is credited to The Charles H. Brown Paint Co., Brooklyn, N. Y. This name, however, does not appear in the New York Telephone directory, though The Brown Paint & Varnish Co., Inc., is listed at 132 Classon Ave., Brooklyn, N. Y.

Stove Finishes

We look forward to receiving your interesting magazine, as procelain enameling is being replaced more and more by other finishes in the stove industry. In your June, 1935 issue, in the Question and Answer department, there was an answer by J. E. Greene about "Compo Impervious Paint." We would appreciate it very much if you would tell us the names of any companies that manufacture this product.—J. F. Co. (Cooking Appliances).

Silk Screen Process

I would like to get all the information possible regarding the "Silk Screen Process." Are there automatic machines on the market, and what type of work will they handle? What can be done with photographic reproduction in making screens? What companies handle silk screen materials for the making of screens, pastes, and supplies?—K. M.

Metal Racks

Would you please tell us where we might buy some metal racks for color cards in a paint store? We are also interested in buying tack rags which you recently were advertising in your magazine.—O. M. Co. (Building Materials).

Striping Lawn Mowers

I am writing for information regarding striping of lawn mower parts. We have a number of letters that we touch up on the outside of

Yesterday—

"Wood Lacquers"

TODAY—

3697 SUPER WOOD FINISH

A GRAND PIANO is not comparable with a midget radio. Neither is 3697 with "wood lacquers" of the usual type, made to sell at minimum prices. If the best is none too good for your product, remember 3697 only costs a trifle more. This trifle, however, permits us to use ingredients of surpassing qualities.

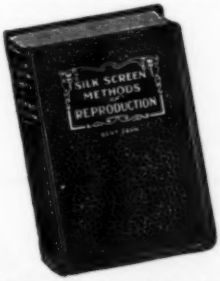
3697 has optimum resistance to graying, checking, cracking and scaling. It dries rapidly, recoats rapidly, but hangs on grimly to the wood.

At its best, wood is a treacherous surface for finish. We expect 3697 to be used on the best wood, carefully prepared. Try humidity and temperature-change tests on it. Test it for toughness. Notice the enduring brilliance of the finish.

For the most critical—3697.

The
VARNISH PRODUCTS CO.
5208 HARVARD AVENUE, CLEVELAND, OHIO

SILK SCREEN METHODS of REPRODUCTION



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the castings; and then we also have the reel blades which have an indentation of which we stripe red. At the present time, this is all done by hand with a brush, and I think there is a better way. . . . Will you kindly give us your advice on this matter?—S. L. M. Co. (Lawn Mowers).

To Clean Brass Forgings

In going over INDUSTRIAL FINISHING magazine, I am wondering whether it is possible to obtain from you a practical method of cleaning brass forgings as they come from the hammer. There are any number of ways by which it is now being done, but I am wondering whether your records show one that is more thorough and practical than the one we are using. It requires a chemical cleaning process.—J. C. Mfg. Co.

Flexible Finish

In the August 1935 INDUSTRIAL FINISHING magazine, page 48, there is an article about a lacquer coating which has recently been developed by a New Jersey manufacturer of industrial finishes. Would you kindly send us the name of this manufacturer, as we would like to make some inquiries about this finish?—S. T. Co. (Sprinklers).

EDITOR'S NOTE: This refers to a lacquer coating that stretches like rubber. The company has been advised of the manufacturer's name and address.

Bleaching Process

With reference to the November issue of INDUSTRIAL FINISHING, we are very much interested in the bleaching process about which there is a small article on page 51. We will appreciate it if you will kindly give us the name of the firm with whom we may communicate concerning this matter.—B. & E. Co. (Chemicals, Colors, Oils).

Rusty Iron Finish

We have some chair bases we desire to finish in what is known as "Rusty Old Iron Finish." Can you give us the process and materials used in developing this finish on iron? —G. N. Furn Co.

Cleaning Metal

I have a proposition on which possibly some reader of INDUSTRIAL FINISHING can give me some assistance. Metal parts for refrigerators are made of the following metals: Terne plate, galvanized iron and galvanneal.

The present method of cleaning is vapor degreasing, after which the parts are washed with synthetic thinner and then wiped dry.

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PAINT AND VARNISH REMOVERS & RUBBING COMPOUND
By specializing in these items we can effect a real saving for you. Write us!
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Pyroxylin Lacquers — Synthetic Enamels — Insulating Varnishes—Baking Enamels
IMPERVIOUS PRODUCTS
FOR INDUSTRIAL USE
IMPERVIOUS VARNISH COMPANY
KOPPERS BUILDING, PITTSBURGH, PA.
Protective Coatings — Finishing Varnishes—Primers and Surfacers
ENAMELS IMPERVIOUS IVCO PRODUCTS LACQUERS VARNISHES TRADE MARK

One coat of synthetic enamel is then sprayed on and baked three hours at a temperature of 200°F.

Results: On the terne plate and galvanneal, ivory and green enamel show dull spots on the surface. The white shows yellow spots. A primer coat, I presume, would overcome this trouble, but the product will not afford a 2-coat finish.

What do you suggest for a wash after the degreasing operation to overcome this trouble?—G. E. H.

Powdered Flock

We would greatly appreciate it if you could possibly advise us the names of concerns from which we can obtain flocking material, that is, the powdered flock to apply to the lacquer?—F. Chemical Co.

Dipping Machine

Can you, through your organization, advise where we might be able to pick up a good second-hand dipping machine?—J. S. Co. (Refrigerators).

Discovery of Shellac

The writer is always interested in any information obtainable about shellac, but has yet to find any authentic data as to the origin of shellac varnish, and has hazarded a guess as to its "discovery," as incorporated in our last monthly shellac letter, of which copy is enclosed. It may appeal to some of the INDUSTRIAL FINISHING family. In any event it would be interesting to hear from any of your subscribers who may have other ideas on the subject, should you care to start something along this line.—MORTON NOBLE, Manager Shellac Sales, Berry Brothers.

FIRST CUTTER OF SHELLAC:

Who was the first "Wise Man from the East" to formulate shellac varnish? Perhaps he was not so learned after all. Charles Lamb tells us the wonderful flavor of roast pig was accidentally discovered by a Chinaman whose pet porker's charred remains were found in the ruins of his burned hut. And as Wells, in his "Outline of History" suggests the discovery of bronze from the chance fusing of copper and tin, through carelessness rather than skill, so, too, is it not possible some ancient inhabitant of the forests of India,

Manufacturers of:

CLOCKS—ELECTRICAL GOODS — NOVELTIES — TOILET SEATS — TOYS, LAMPS, ETC.

Make your Finish Sell your goods!

- Walker's Metallic Pyroxylin Enamels. For new and different effects. Has unusual "Eye Appeal."
- Produces a beautiful lustrous finish with excellent adhesion and good coverage in one coat. Can be polished or buffed to obtain a higher lustre.
- Furnished in: Gun Metal, Gold, Silver, Bronze, Copper and various pastel shades.
- Has wide use and varied application. Is now being used effectively over a wrinkle finish to enhance its decorative appearance.

Chart showing full line of colors or a finished sample will be sent on request.

H. V. Walker Co.
ELIZABETH, N. J.

The Emblem of Standard Quality in Finishes.

SEND FOR YOUR COPY!

"THE METAL CLEANING HANDBOOK" is intended to provide a ready reference and guide for the use of those directly interested in or concerned with metal cleaning.

To these, a limited number of copies are available. A request on your business letterhead giving your official title or position will bring a copy. To all others, a copy will be sent on receipt of the nominal sum of $1.00 to cover the cost of publication.

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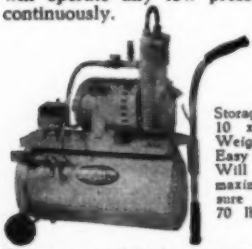

Storage Tank 10 x 20-in.: Weight 85 lbs. Easy to handle. Will maintain maximum pressure of 50 to 70 lbs.

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while enjoying a cup of wine underneath a Palas tree, may have clumsily knocked therein from a nearby branch, a piece of its scale encrusted lac, which in combination would have given him a crude interior finish?

This suggested origin would seem to be confirmed by several formulas for wood and brass lacquer taken from the "Cyclopaedia of India and of Eastern and Southern Asia" calling for certain proportions of spirits of wine in combination with shell-lac. In any event, whether our guess is correct or not, shellac cut in alcohol, is a combination that has come to us out of the dim and distant past, and it is one that modern science has found hard to improve upon, as a first coater or finishing coat.

Since these ancient times, however, experience has taught the modern shellac cutter and bleacher many ways in which this product may be bettered—the correct proportions to meet particular needs; the best grade of alcohol to use; the clarification to eliminate all foreign matter, all impurities; the bleaching to make the orange shellac, white; the laboratory tests; the packing in containers that will preserve and not discolor the contents: These and many other ways of bettering this, shall we say "Prehistoric Products", the experienced manufacturer can offer the modern shellac user. . . . .

Lacquer on Furniture Increasing

EDITOR'S NOTE: One of our friends submits the following as being of interest to I. F. readers:

The present scarcity and high cost of the standard varnish oils have resulted in the rather widespread substitution of cheaper products for these standard oils in varnishes and enamels. The varnish maker has not had time to become entirely familiar with the use of these new oils and resins nor with the drying characteristics and durability of the finishes containing them. As a result, many finishers who have not heretofore used nitrocellulose lacquer are adopting lacquer as their standard finish because of the uniformity of quality assured by unlimited supplies of raw materials.

The price of lacquer ingredients has tended to decline over the past few years and at the same time the quality of furniture lacquers has constantly been improved. The trouble-proof characteristics of lacquer—rapid drying to a durable, beautiful finish which is remarkably resistant

to printing, scratching, and moisture —are especially valuable to the production manager who must maintain a high production schedule and at the same time keep his inventory of finished furniture, and furniture in process, at a minimum.

Novelty Finishes

We note in your issue of October 1935, under the heading "Letters from Readers", that the B. & C. Co. (novelties) would like information as to novelty finishes on wood. We have developed a number of such finishes on dress and hat ornaments, and novelty jewelry in general. We would appreciate very much your advising us the name and address of the concern requesting this information.—Chemical Products Corp.

Electric Paint Mixer

Kindly advise us if you know of an inexpensive electric paint mixer small enough to be used in five gallon containers. — F. H. B. Co. (Hardware Specialties).

Comments on— "Finishing Room Fires"

In your November issue of INDUSTRIAL FINISHING, page 15, you list an article on "Finishing Room Fires"; would you mind telling us confidentially what was the type of extinguisher in the 2½-gallon size that did not put out this fire? We want to make sure that we have the right type of extinguisher in our finishing room department. — H. S. T. Co. (Store Equipment).

I read with interest the article with title "Finishing Room Fires" in the November issue of INDUSTRIAL FINISHING.

I note in that part of the article where fire extinguishers were mentioned, that the writer or author mentions a 2½-gallon extinguisher, and states that the extinguisher had little or no effect on the fire.

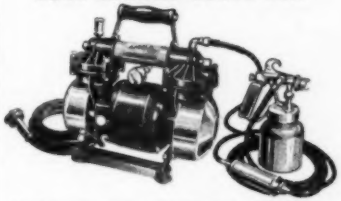
There are many types of extinguishers of 2½-gallon capacity. Some types which use water solutions are worthless on a paint, oil or lacquer fire. The foam or the vaporizing liquid (carbon tetrachloride base) are the types recommended for paint, oil, lacquer and other inflammable liquid fires.

The writer has visited a number of

CROWN AIRFLO

Portable Spray Painting Unit

OPERATES WITHOUT OIL CUTS UPKEEP COSTS 50%



Ideal for the small manufacturer. No Crankcase—no oil-laden air. Operates with oil-less bearings guaranteed 25 years. Delivers more pressure—more volume per motor horsepower. Fewest moving parts. G-E motor, blower-cooled. Extremely portable. ¼,1/3 and ½ H.P. Priced from $74.50. Write for full details.

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Four distinct types available, all with the famous U. S. Navy-Biggs design facepiece. Illustrated here, the new, light-weight M. S. A. PAINT RESPIRATOR HALF-MASK with Replaceable Cartridge . . . . . factory-loaded, affording uniformly low breathing resistance and high protective efficiency . . . renewable in a few seconds . . . assuring complete protection against the gases and fumes met with in paint-spraying, such as Benzol, Amyl Acetate, etc. — as well as fine particles of the pigments.

For complete information and prices on all M.S.A. Half-Masks, write for Bulletin EM-1.

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Braddock, Thomas & Meade Sts.
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YOU CAN'T GO WRONG!

Use any Revolite masking tape . . . or all three...with the confidence that they will stick in all weathers, give perfect color separation, cut costs and working time.

PERMACEL
Highly-flexible paper masking tape with precision edges for easy, accurate color separation. Weather and lacquer resistant.

JONFLEX
Duplicates these qualities in a fine-woven cloth tape.

INDUSTRIAL
Differs from Jonflex only in that its cloth backing is heavier, stronger, coarser in texture.

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A Subsidiary of Johnson & Johnson
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Sizes ½ to 36" wide, in 60-yd. rolls. Send for samples.

factories, and it may be a surprise to the average reader to learn that 75% of the finishing rooms are equipped with extinguishers that are not of the proper type for such fire hazards which are found in finishing rooms.

If those in charge of fire protection, or those who are responsible for the purchase of extinguishers would write to the National Board of Fire Underwriters, Chicago or New York, and ask for information on the proper types needed, they would save money by stopping fires before they gained a big headway.

Insurance inspectors very often recommend the soda-acid type for general use in an industrial plant. In many cases this type is placed in the finishing room where the fire hazard is entirely different from the fire hazards found in other parts of the factory. The use of a soda-acid type on oil, lacquer, gasoline, or inflammable liquid fires only helps to spread the fire. For general all-around use in the finishing room, the vaporizing liquid type (carbon tetrachloride base) has proved to be the most effective. This liquid turns into a heavy cloud-like vapor when coming in contact with fire. The vapor is heavier than air and will quickly smother the fire. Vaporizing liquid will not damage the lacquer in dip tanks like the foam type.

The Engineering Department of our plant will gladly send complete information to anyone who has a special fire hazard. This service is free. —RAY C. HAHN, General Sales Manager, Fyr-Fyter Co., Dayton, Ohio.

Meat Packing Firm Uses Uniform Colors

We are intensely interested in the subject of your editorial appearing on page 54 of the November 1935 issue, of INDUSTRIAL FINISHING. ("Colors Identify Company Products and Properties").

We heartily endorse the suggestion that commercial advertisers have boundless resources to be found in the intelligent use of color by placing an easily identified and effective individual color scheme before the public eye at every opportunity. We do however, take exception to your statement that as yet no one has gone all the way, and respectfully direct your attention to the firm of Kingan & Company in your city (Indianapolis).

There, you will find, the concern which pioneered the meat packing industry in America has also made

some outstanding contributions to the science of uniform color consciousness in publicity and advertising. This includes fleets of motor trucks in various cities as well as Indianapolis, huge overland motor caravans, letter heads, window trims and display advertising, labels and wrappers on package products, lithographed coatings on metal containers which are processed in their own plant, wrappers on Reliable hams and bacons, caps and aprons worn by employes in retail stores and branch offices as well as other points in the plant, and even the walls and ceilings in some of the offices.

The box cars, as mentioned in your editorial, were also painted with the same color scheme and could be identified as far as the eye could see as a Kingan carrier. This particular effect, however, has been altered due to regulations of the Interstate Commerce Commission or some other red tape organization which is too copious for my meagre comprehension. However, the box cars are now finished in a light buff, which is one of the prominent colors and no doubt can be easily identified as belonging to the Kingan color scheme.

In short, I believe that color has been applied to everything except the squeal of the pig, which legend holds is the only item entering a packing plant which is not recovered. It has just occurred to the writer that cooperation with Walt Disney might even find some utility for that item!—INDIANAPOLIS PAINT & COLOR Co., Robert J. Smith, Assistant General Manager.

Finishing Fancy Hardwoods

We are turners of hardwoods such as lignum-vitae, cocobolo, rosewood, ebony, etc. Among the products we manufacture are such items as handles and knobs, gavels, round sound blocks, balls, muddlers, and whiskey bottle stoppers.

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Therefore, we are wondering whether you have any data in this connection?—K. U. W. Co.

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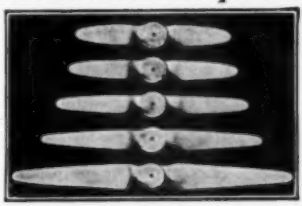

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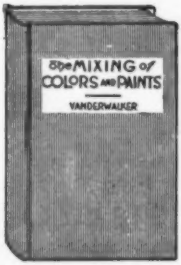

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EDITORIAL

Preparations to Go Ahead in 1936

More firms are anticipating and planning for better business in 1936. Major indications point toward improved business conditions, although there's always minor straws blowing the other way. Even in boom times, some men are out of work and some firms are not doing so well. As a matter of fact, one must be either lucky or energetic, alert and resourceful to get what he considers something near his rightful share of income any time.

With continued business improvement there will be demands in many factories for: 1) Better equipment to replace what's worn out or obsolete, 2) better materials and supplies with which to turn out products of higher quality and more attractive appearance, and 3) better methods to make maximum use of the improved equipment, materials and supplies—making the investment pay for itself in a reasonable length of time, and possibly enabling the firm to reduce its manufacturing costs.

This tooling-up of the factory to meet new conditions will call for all the past knowledge and new information that production men can command. They can become better informed through the sales and service representatives who call upon them, through the literature prepared for them by manufacturers, and through the wealth of information presented every month in the pages of their industrial magazine.

Furniture Style Forecast

The following forecast is furnished through the courtesy of the American Furniture Mart's 600 exhibitors and their designers, the material being compiled from advance information furnished by them.

Modern design—considered dead and buried by many furniture men when the "modernistic" bubble burst six years ago—will reach the peak of the come-back trail on Jan. 6, when the American Furniture Mart's 600 exhibitors open their 24th major market at Chicago. It is predicted that no less than 80% of the furniture on display at the January market will be styled in the modern manner. The guess is doubt-

less high—for 18th Century English and Early American, in particular, have a place in the American home that no other type of furniture can threaten.

What are the characteristics of the new modern? It will be very much like the modern furniture shown during the previous season. Contemporary design, after several years of wild fluctuation, during which the "modifying" process went steadily forward, has finally fitted into a groove . . . although it still breaks loose occasionally in unexpected fashion. Here's a thumb-nail sketch of modern furniture for 1936:

1. It's definitely "modified," "livable," "conservative" or whatever adjective best describes the absence of "freak" designing. It's more graceful than formerly, with more curves and fewer angles, although still "functional" rather than ornate.

2. The standard furniture woods—walnut and mahogany—are being more widely used, instead of the fancy, imported veneers that were once considered almost essential for modern. Modern in maple is also gaining ground. And more and more attention is being paid to the figure in the wood, with finishes employed that best bring out the beauty of the grain.

3. Utility is still stressed, each piece being designed to be as useful as possible to the owner. The addition of drawers to end tables, odd-shaped compartments (for hats, hanging wearing apparel, etc.) to chests, sliding drawers at the top of cedar chests . . . these are typical of the trend.

Early American patterns will do well, as the vogue for these designs, particularly in solid maple, continues unabated. Georgian samples—Sheraton, Hepplewhite, and particularly Chippendale—will dot most of the exhibits. There'll be just as much Early English in oak as formerly,

especially for the dining room; just as many Louis XV and Louis XVI patterns, especially for the bedroom and living room; Biedermeier is hanging on, although in small volume; the Spanish designs sponsored particularly by the California factories will be among those present; and commercial or "borax," although it's fast losing ground to modern, will still be with us.

Makers of metal furniture—tubular steel and flat—are preparing for a big market with the largest lines in their history. The winter market is the peak season for outdoor and porch furniture, where the metal lines get most of the play, and in addition this type of furniture is now being widely used for residential interiors, not to mention restaurants, beauty shops, shoe stores, doctors' offices and such establishments. Fabrikoid covers, table tops of cork, formica or glass, and unusual compositions play an important role in this field.

Surveying the acceptance of furniture woods, manufacturers report:

1. Walnut remains, by long odds, America's favorite for furniture, with a big lead all over the country, but especially in the mid-continent section. Both walnut veneers and solid walnut are selling well, as dealers hold to the theory that, in the midst of accustoming the country to new forms in furniture, it's best to feature the familiar woods.

2. Mahogany, which attained more prominence last season than it has enjoyed for several years, continues to gain ground.

3. Maple, due largely to its growing use for modern, as well as Early American, is holding its position.

4. Oak is still the reigning favorite for Early English suites and is getting its largest play for dining rooms.

New woods continue to make their appearance, largely for special inlays and ornamentation, one of the recent additions being Puveco . . . and English harewood (or finishes to resemble it) will be more prominent. Lighter finishes promise to be more prevalent than dark finishes . . . and carvings, especially of the more elaborate variety, are being shunned in most of the new lines.

Get it and Keep it

In the January issue, INDUSTRIAL FINISHING will again present a leading feature article which is recognized by readers as being of timely interest and lasting value. It is the Annual Review of Developments in New and Improved Finishing Materials, wherein the names, chief characteristics and merits of a hundred or more of the latest finishes are classified and presented in brief, easy-to-read paragraphs. All manufacturers of material have been invited to send in data for this 1936 exhibition of What's New.

While this is a review of developments during 1935, many of the materials presented are of such recent origin that they will be announced for the first time in this article.

Every user of industrial finishing materials is urged to be sure to get a copy of this January issue. Study the materials listed in the Annual Review article. Something is sure to be there that you've been looking for—something you would like to investigate further, once you learn that it's on the market. Keep this copy where you can lay hands on it any time next year, because you may want to consult it frequently and write for further information about some of the materials listed therein.

Remember, everything is undergoing a more or less rapid change everywhere, and what doesn't interest you today or next month, may be of tremendous value to you some months later. The January issue of INDUSTRIAL FINISHING doesn't cost much and it doesn't take up much room. Get it and keep it.

Progressive Old Finisher

Fifty-five years at the finishing game and "helped make three millionaires" at the modest furniture factory where he's been foreman most of those years. He'd just finished patching a damaged piece so expertly you couldn't tell where the deep scratches had been. Then he greets you and shows you around his well-kept finishing room. Here are finished chairs and davenports which, to all appearances, have an excellent rubbed finish. "No rubbing there," he declares; "just two sprayed coats of lacquer over a smoothly sanded shellac or sealer coat."

Some excellent striping is in evidence—cream stripes on darker wood finish and black stripes on light wood finish. You ask how it's done. "Oh, I use a stripper that I got out of your magazine," he says, meaning he'd purchased it from an advertiser in INDUSTRIAL FINISHING. Picking up the small simple tool he demonstrates it, making perfect stripes, handling it freehand as easily and expertly as a salesman uses a fountain pen.

You come to a left-over davenport frame pushed back halfway out of sight. It has beautifully finished arm rests. "We sent that to the show two years ago, but the design didn't take," he tells you. "The arms are finished in an alcohol-proof lacquer and I've tried everything in the way of liquids to remove the finish. Varnish remover or lacquer thinner won't touch it. We're just keeping it here to occasionally demonstrate how good a finish can be."

And, as you go along through the department, this friendly foreman finisher shows you many things of interest—short cuts in production, new types of finishes, and many excellent examples of newly finished furniture. This man, more than 70 years old, looking 20 years younger, acting 30 years younger, impresses you as being a success in his line—devoted to his work, taking pride in producing a high-quality finish at comparatively low cost, and what's so important today, he remains progressive.

More New Men at Work; Accidents, Fires, Explosions

Men who are new at shop work and men who have been away from it for some time are now at work in the majority of factories. In many cases new kinds of equipment, materials and supplies are in use on new kinds of products—all of which are unfamiliar to these employes. Production is being speeded up, and in some places there's overtime work. Double and triple shifts are not unusual.

As a result, the danger of accidents, fires, explosions, and various mishaps are vastly multiplied, and these unfortunate things can set back a manufacturing business tremendously. They are disturbing, distasteful and very costly.

To avoid them, adequate preventative measures must be taken. Effective safety appliances are important and helpful, but they must be kept accessible and always in first class condition for instant service—and every workman must be taught how to use them. The human element is a big factor in safety. Workmen need to be reminded repeatedly about being careful. Industrial safety campaigns should be thorough and continuous in every establishment. Weekly meetings should be held, and at every meeting some actual case of an accident, or fire, or explosion should be related in detail. The lessons derived from hearing the details of these actual incidents will be much more impressive and better remembered than any other kind of lecture on rules and regulations. It isn't too expensive to go all the way in making the factory and the workmen safe from mishaps. After all, isn't it the factory and the workmen therein that form the productive organization which makes the profits for management?

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Finishing Room Trucks

Where labor is cheap, where time is of no consequence, and where excessive congestion would not permit their use any way, factory management has no need to concern itself about trucks. Factory trucks are an element of overhead expense wherever used, and if they can be dispensed with economically and profitably, why there is no excuse for having them.

In some finishing rooms products in process are moved satisfactorily by conveyors. In others trucks are really needed, both for moving articles in process and for supporting them on wheels for necessary intervals of waiting between operations.

If trucks are needed then it naturally follows that they should be carefully selected for the type of service required. For most finishing rooms, the best trucks — in point of convenience, speed, and safety — are those that have been especially designed and built to handle certain types of products under certain kinds of conditions. Just anything on wheels won't do. As a basis to start, in the selection and design of a truck to be used in the typical finishing room, the usual requirements are: 1) A low flat bed of about the proportions of the top of an ordinary office desk. 2) Wide-face swivel casters on each of the four corners — preferably roller bearing and rubber-faced wheels. This gives a non-tipping bed that is easily moved in any direction over the smooth level floor of the finishing room.

What if anything should be placed above the flat bed of this truck will depend upon the products to be handled. A single or multiple railing along one or more sides, an upper deck, a skeleton rack, wire mesh sides, or some other kind of superstructure, permanent or removable, may be desirable according to the nature of the articles or parts to be placed on the truck for movement or temporary storage.

In conclusion, if trucks are deemed necessary in the finishing room, see that in design and construction they fit the requirements perfectly, or as nearly ideal as possible, so that through their use the work will move forward with maximum economy and safety. Regardless of how much or how little they cost, makeshifts are not economical, convenient, nor safe.

Classified Advertising

Advertisements under this heading 45 cents a line per insertion, minimum charge, $1.35. In estimating, calculate six words to one line, and add one additional line for heading. Use this department to obtain help, find positions, buy and sell equipment, dispose of manufacturing properties, etc.

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